

Natality



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An Overview: 2003

Total Resident Live Births	11,022
Crude Birth Rate per 1,000 Population	14.6
Median Live Birth Weight (Grams)	3,374
Low Weight Births (Less than 2,500 grams)	734
Low Birth Weight Rate per 1,000 Live Births	66.6
Mean Age of Mother	27
No Prenatal Care (Percentage of Total Single Live Births)	0.8

For the first time in 2003, mothers were able to indicate multiple births on the birth certificate. Please see page 214 in the Technical Notes for a more in depth explanation. There were 11,022 births to South Dakota residents in 2003, for a crude birth rate of 14.6 per 1,000 South Dakota resident populations. Resident births increased by

3.0 percent from 2002 when there were 10,698 births.

In 2003, 50.5 percent of the babies born were male and 49.5 percent were female. Racially, white births were 50.3 percent male and 49.7 percent female; American Indian births were 51.2 percent male, 48.8 percent female. The low birth weight rate per 1,000 live births decreased from 71.8 in 2002 to 66.6 in 2003. This was a 7.2 percent decrease from the 2002 low birth weight rate.

Table 4, below and Figure 2, page 12, display the live births and crude birth rates for the United States and South Dakota for the past 20 years. As the illustrations indicate, South Dakota's rate remains above the national average.

Table 4

Resident Live Births and Crude Birth Rates, South Dakota and United States, 1984-2003

Year	United States		South Dakota	
	Number	Crude Rate	Number	Crude Rate
2003	*4,093,000	*14.0	11,022	14.6
2002	4,021,726	13.9	10,698	14.2
2001	4,025,933	14.5	10,475	13.8
2000	4,058,814	14.7	10,346	13.7
1999	3,959,417	14.5	10,516	15.1
1998	3,941,553	14.6	10,281	14.8
1997	3,880,894	14.5	10,168	14.6
1996	3,891,494	14.7	10,469	15.0
1995	3,899,589	14.8	10,470	15.0
1994	3,952,767	15.2	10,504	15.1
1993	4,000,240	15.5	10,718	15.4
1992	4,065,014	15.9	11,007	15.8
1991	4,110,907	16.3	10,930	15.7
1990	4,158,212	16.7	10,987	15.8
1989	4,040,958	16.4	11,072	15.5
1988	3,909,510	16.0	11,185	15.7
1987	3,809,394	15.7	11,482	16.2
1986	3,756,547	15.6	11,623	16.4
1985	3,760,561	15.8	12,129	17.2
1984	3,669,141	15.8	12,431	17.8

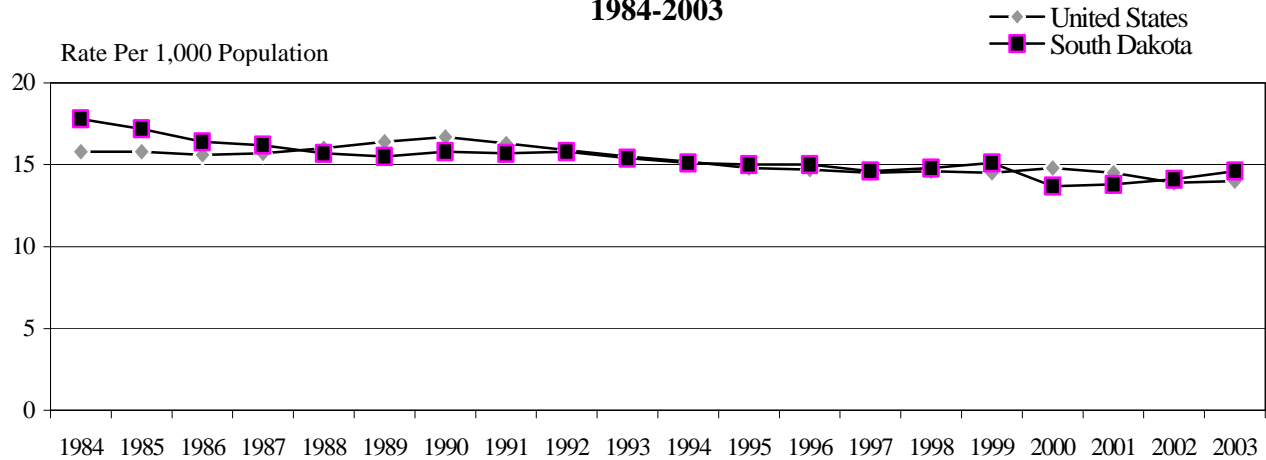
Note: *U.S. data are provisional.

The decrease in the crude rate in 2000 is due to the change in population from the 2000 census.

Crude birth rates are per 1,000 population.

Source: National Center for Health Statistics
South Dakota Department of Health

Figure 2
Resident Live Birth Rates,
South Dakota and United States,
1984-2003



Source: South Dakota Department of Health

Table 5
South Dakota Resident Live Births by
Mother's Race, 1984-2003

Physicians attended 92.5 percent of South Dakota resident births in 2003, while certified nurse midwives attended 6.6 percent of the births. In 2002, South Dakota physicians and midwives attended 92.4 percent and 6.8 percent of the births respectively. In 2003, home births represented 0.4 percent of South Dakota resident live births. In 2002, home births represented 0.5 percent of South Dakota resident live births.

Births by Race

Table 5 shows the number and percent of resident births by mother's race since 1984. In 2003, the percentage of births to whites decreased by 3.0 percent, while the percentage of births for American Indians increased by 12.4 percent. The percentage of births to other races increased 13 percent.

Births		White		American Indian		Other	
Year	Number	Number	% of all Births	Number	% of all Births	Number	% of all Births
2003	11,022	8,642	78.4	2,091	19.0	289	2.6
2002	10,698	8,648	80.8	1,805	16.9	244	2.3
2001	10,475	8,469	80.8	1,770	17.0	233	2.2
2000	10,346	8,416	81.3	1,682	16.3	245	2.4
1999	10,516	8,658	82.3	1,665	15.8	192	1.8
1998	10,281	8,383	81.5	1,716	16.7	181	1.8
1997	10,168	8,412	82.7	1,538	15.1	218	2.1
1996	10,469	8,655	82.7	1,632	15.6	181	1.7
1995	10,470	8,684	82.9	1,564	14.9	221	2.1
1994	10,504	8,771	83.5	1,533	14.6	197	1.9
1993	10,718	8,822	82.3	1,720	16.0	173	1.6
1992	11,007	9,090	82.6	1,739	15.8	159	1.4
1991	10,930	9,068	83.0	1,665	15.2	132	1.2
1990	10,987	9,165	83.4	1,668	15.2	154	1.4
1989	11,072	9,163	82.8	1,753	15.8	156	1.4
1988	11,185	9,343	83.5	1,696	15.2	146	1.3
1987	11,482	9,642	84.0	1,695	14.7	145	1.3
1986	11,623	9,807	84.4	1,678	14.4	138	1.2
1985	12,129	10,301	84.9	1,689	13.9	139	1.2
1984	12,431	10,670	85.8	1,637	13.2	124	1.0

Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health

Table 6
South Dakota Resident Live Births by State in
Which Birth Occurred and Mother's Race, 2003

	Total	RACE OF MOTHER		
		White	American Indian	Other
Total	11,022	8,642	2,091	289
Colorado	4	3	*	*
Hawaii	3	*	*	*
Iowa	134	129	*	3
Minnesota	51	47	3	*
Nebraska	66	17	48	*
North Dakota	138	66	72	*
South Dakota	10,619	8,375	1,961	283
All other	7	5	*	*

Note: *Cells with less than 3 events.

Source: South Dakota Department of Health

South Dakota Resident and Occurrence Births

Table 6 shows that of the 11,022 South Dakota resident births in 2003, 8,642 were to white women while 2,091 were to American Indian women. Of the 11,022 births, 403 occurred out of state. The four states where the majority of these births occurred are bordering states. The percent of births occurring in each are as follows:

- North Dakota-1.3 percent
- Iowa-1.2 percent
- Nebraska-0.6 percent
- Minnesota-0.5 percent

In comparison, Table 7 shows 884 of the 11,503 births occurring in South Dakota during 2003 were not to South Dakota residents.

Birth Weight

Low birth weight (LBW) is defined as live births with a weight less than 2,500 grams or five pounds eight ounces. The data in Table 8, page 14, indicates that in 2003 the majority of births fell into the 3,000 to 3,499 gram or 3,500 to 3,999 gram category. This is consistent with data from the past several years.

Table 7
Live Births Occurring in South Dakota by Mother's
Resident State and Race, 2003

	Total	RACE OF MOTHER		
		White	American Indian	Other
Total	11,503	9,184	2,019	300
Iowa	288	280	4	4
Kansas	3	*	*	*
Minnesota	287	272	7	8
Montana	6	6	*	*
North Dakota	40	36	4	*
Nebraska	183	144	38	*
South Dakota	10,619	8,375	1,961	283
Wyoming	65	61	*	*
All Other	12	10	5	5

Note: *Cells with less than 3 events.

Source: South Dakota Department of Health

Table 8
South Dakota Resident Live Births by Birth Weight and Mother's Race, 2003

Birth Weight (in Grams)	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-499	10	0.1	6	0.1	4	0.2	*	*
500-999	45	0.4	31	0.4	11	0.5	3	1.0
1,000-1,499	67	0.6	53	0.6	14	0.7	*	*
1,500-1,999	138	1.3	110	1.3	23	1.1	5	1.7
2,000-2,499	474	4.3	361	4.2	94	4.5	19	6.6
2,500-2,999	1,712	15.5	1,336	15.5	301	14.4	75	26.0
3,000-3,499	4,104	37.2	3,223	37.3	764	36.5	117	40.5
3,500-3,999	3,341	30.3	2,668	30.9	615	29.4	58	20.1
4,000-4,499	959	8.7	735	8.5	214	10.2	10	3.5
4,500-4,999	157	1.4	111	1.3	44	2.1	*	*
5,000 & Over	13	0.1	7	0.1	6	0.3	*	*
Total	11,022	100.0	8,642	100.0	2,091	100.0	289	100.0
Median	3,374		3,374		3,401		3,175	
Mean	3,346		3,346		3,371		3,165	
Mode	3,289		3,289		3,317		2,977	

Note: Failure of the races and birth weights to add to the total is due to unknown races and birth weights contained in the total birth column and row.

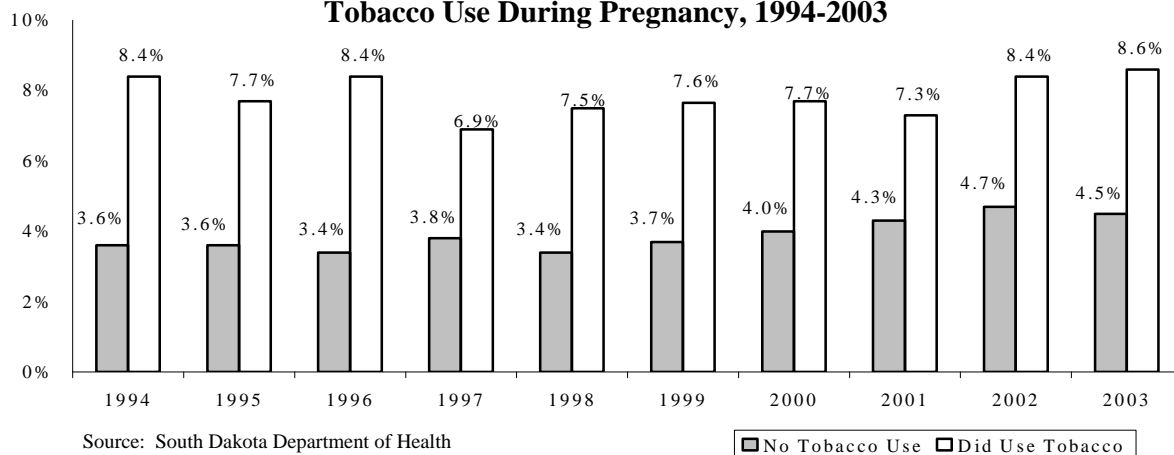
*Cells with less than 3 events.

Source: South Dakota Department of Health

In 2003, there were 734 low weight births or 6.7 percent of all South Dakota resident live births. When looking at race, 6.5 percent of white babies and 7.0 percent of American Indian babies were low birth weight in 2003. In comparison, in 2002 white and American Indian low birth weight births were 7.0 and 7.1 percent, respectively.

Use of tobacco during pregnancy is associated with low birth weight, miscarriages, and infant mortality (1). For example, tobacco use during pregnancy was reported on 18.9 percent of the 2003 South Dakota resident birth certificates of which 8.6 percent had a baby under 2,500 grams (Figure 3). Of those reporting no maternal tobacco use in 2003, 4.5 percent had a low birth weight baby.

Figure 3
Single, Live, Low Weight Births to South Dakota Residents by Mother's Tobacco Use During Pregnancy, 1994-2003



Maternal weight gain is another lifestyle characteristic with a direct relationship to low birth weight. For women of normal weight, the Institute of Medicine recommends maternal weight gain of 15 to 25 pounds (1).

In 2003, 68 percent of low birth weight infants in South Dakota were born preterm. Preterm birth is among the leading causes of infant death (1). Table 9, below, displays preterm and full term – low birth weight births to South Dakota residents by mother’s age.

Table 9
South Dakota Resident Preterm and Full Term Births Less Than 2,500 Grams by Mother’s Age, 2003

Mother’s Age	Weeks of Gestation					
	Less than 32 Weeks		32 to 36 Weeks		37 and Above	
	Number	Percent	Number	Percent	Number	Percent
< 18 Years	3	0.4%	16	2.2%	12	1.6%
18-19 Years	14	1.9%	15	2.0%	16	2.2%
20-24 Years	37	5.0%	109	14.9%	65	8.9%
25-29 Years	40	5.4%	118	16.1%	66	9.0%
30-34 Years	21	2.9%	73	9.9%	39	5.3%
35-39 Years	11	1.5%	37	5.0%	22	3.0%
40-44 Years	4	0.5%	4	0.5%	11	1.5%
Total	130	17.7%	372	50.7%	231	31.5%

Note: Failure to add up to 734 because of 1 unknown gestation.
Source: South Dakota Department of Health

Table 10, on the next page, compares low birth weight to normal birth weight babies by selected behaviors of the mother. All babies compared in Table 10 are at least 37 weeks of gestation and no multiple births are included. Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2003, 34.7 percent were born to mothers who smoked during their pregnancy. In comparison, 18.2 percent of normal birth weight babies were born to mothers who smoked in 2003.

Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2003, 24.4 percent were born to mothers who had low weight gain during their pregnancy. In comparison in 2003,

14 percent of normal birth weight babies were born to mothers who had low weight gain during their pregnancy.

Of the babies born at 37 weeks gestation and above who weighed less than 2,500 grams in 2003, 72.4 percent were born to mothers who sought prenatal care in the first trimester. Similarly, 78.5 percent of normal birth weight babies were born to mothers who sought prenatal care in the first trimester in 2003.

When looking at the selected behaviors of mothers and whether their behaviors affected if they had a baby who weighed above or below 2,500 grams for the last ten years, the results are similar to the findings in 2003.

Table 10
Selected Behaviors of the Mother by Infant's Birth Weight, 2003 and
1994-2003

Behaviors	2003		1994-2003	
	Birth Weight (Grams)		Birth Weight (Grams)	
	<2500	2500+	<2500	2500+
Smokers	34.7%	18.2%	42.1%	19.9%
Low Weight Gain of Mother	24.4%	14.0%	20.3%	11.7%
First Trimester Prenatal Care	72.4%	78.5%	77.1%	80.7%

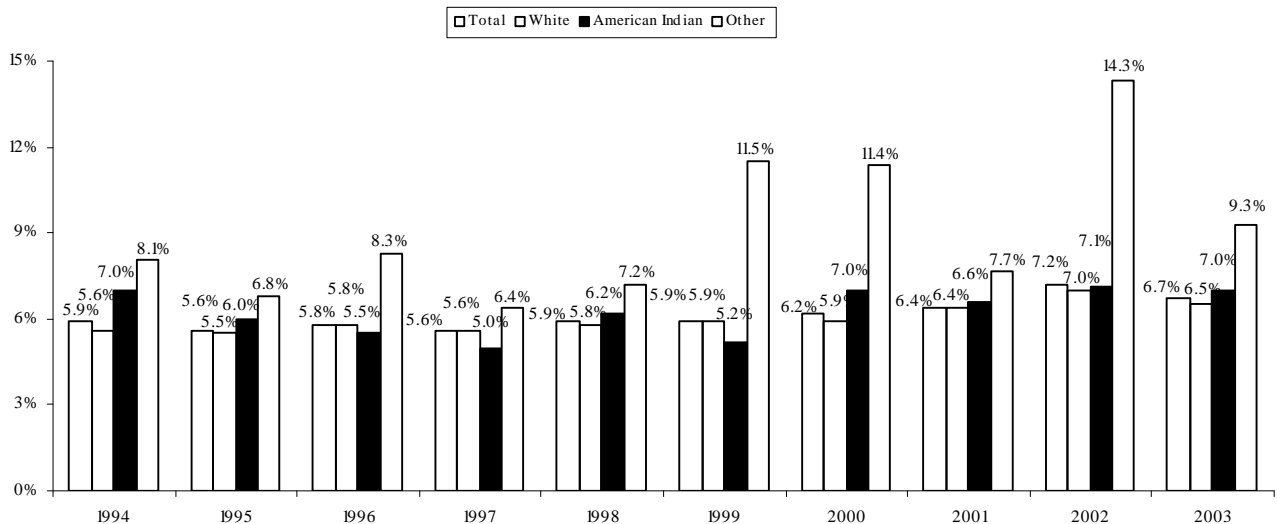
Note: Only infants who were at least 37 weeks gestation were included in this table.
Only mothers who gained less than 16 lbs are included in the low weight gain data.
Multiple births are excluded.

Source: South Dakota Department of Health

Figure 4, below, compares the low birth weight babies by race of mother from 1994 to 2003. In 2003, white women accounted for 561 or 6.5 percent of low birth weight babies. American Indian women accounted

for 146 or 7.0 percent of low birth weight babies. In 2003 there was a 7.1 percent decrease in white low birth weight babies while among American Indians there was a 1.4 percent decrease in low birth weight babies.

Figure 4
South Dakota Resident Low Birth Weight Births by Race of Mother, 1994-2003



Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health

Mother's Age and Race

Table 11, below, illustrates that women aged 25 to 29 accounted for the largest percentage of South Dakota resident births in 2003, at 30.7 percent. Women less than 20 years of age comprised 9.3 percent of the total resident births. White women less than 20 years of age accounted for 6.2 percent of the total

white births, while American Indian women of the same age constituted 22 percent of the total American Indian births. The median ages for white and American Indian mothers were 27 and 23 years of age, respectively. The modal ages were 26 and 20 years of age, respectively.

Table 11
South Dakota Resident Live Births by Mother's Age and Race, 2003

Age of Mother	Total		Race Of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 18	310	2.8	132	1.5	168	8.0	10	3.5
18-19 Years	719	6.5	405	4.7	293	14.0	21	7.3
20-24 Years	3,114	28.3	2,278	26.4	763	36.5	73	25.3
25-29 Years	3,382	30.7	2,813	32.6	479	22.9	90	31.1
30-34 Years	2,302	20.9	1,983	22.9	252	12.1	67	23.2
35-39 Years	977	8.9	842	9.7	116	5.5	19	6.6
40 & over	218	2.0	189	2.2	20	1.0	9	3.1
Total	11,022	100.0	8,642	100.0	2,091	100.0	289	100.0

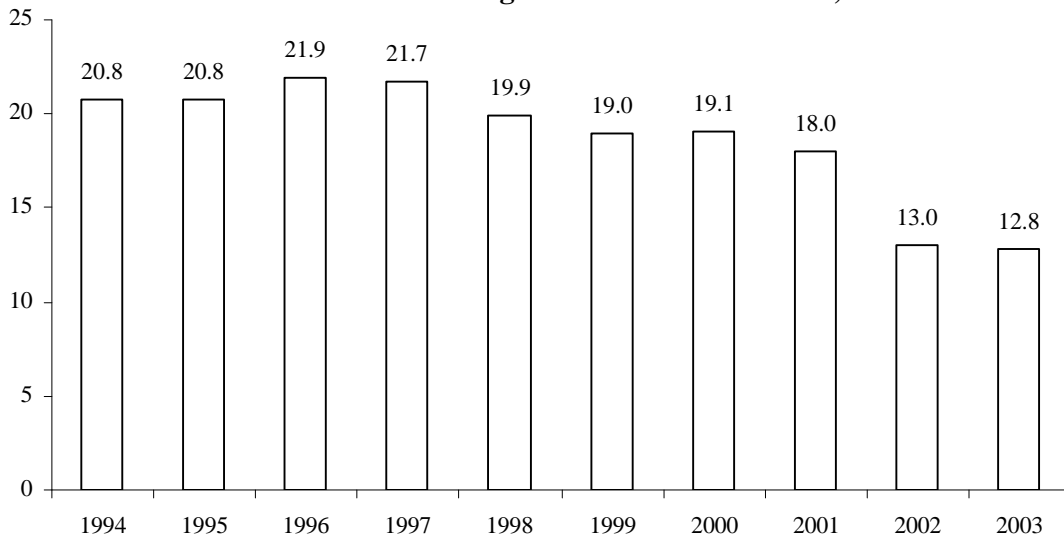
Note: Failure of the races to add to the total is due to unknown races contained in the total birth column.

Source: South Dakota Department of Health

Figure 5, on the next page, illustrates South Dakota resident teen births (17 years old and younger) as a rate from 1994 through 2003. In 2003 the teen birth rate was 12.8 while in 2002 the teen birth rate was 13.0. This shows a

1.5 percent decrease in the teen birth rate from 2002 to 2003. Since 1996 there has been a decline in the number of teen births. A 41.6 percent decrease in the teen birth rate from 1996 to 2003.

Figure 5
South Dakota Resident Single Live Teen Birth Rates, 1994-2003



Note: For purposes of calculating birth rates, multiple births (twins, triplets, etc.) are counted only as a single birth.
Source: South Dakota Department of Health

Prenatal Care

Table 12, below, shows the number and percentage of South Dakota resident single live births and when the mothers started prenatal care in 2003. Over 78 percent of mothers initiated care in the first trimester, 83.0 percent of white mothers and 59.8 percent of American Indian. Less than one percent did not obtain prenatal care at all, 0.4 percent of white mothers and 2.4 percent of American Indian mothers.

Figure 6, on the next page, shows the 10 year trend for South Dakota resident single live births and when the mothers started prenatal care. Since 1999, there has been a decline in the number of women who begin prenatal care in the first trimester until this year. In 2003, 78.3 percent of the women sought prenatal care in the first trimester, while in 2002 77.6 percent of the women sought care in the first trimester. This is a .9 percent increase.

Table 12
South Dakota Resident Single Live Births by Trimester Prenatal Care Began and Mother's Race, 2003

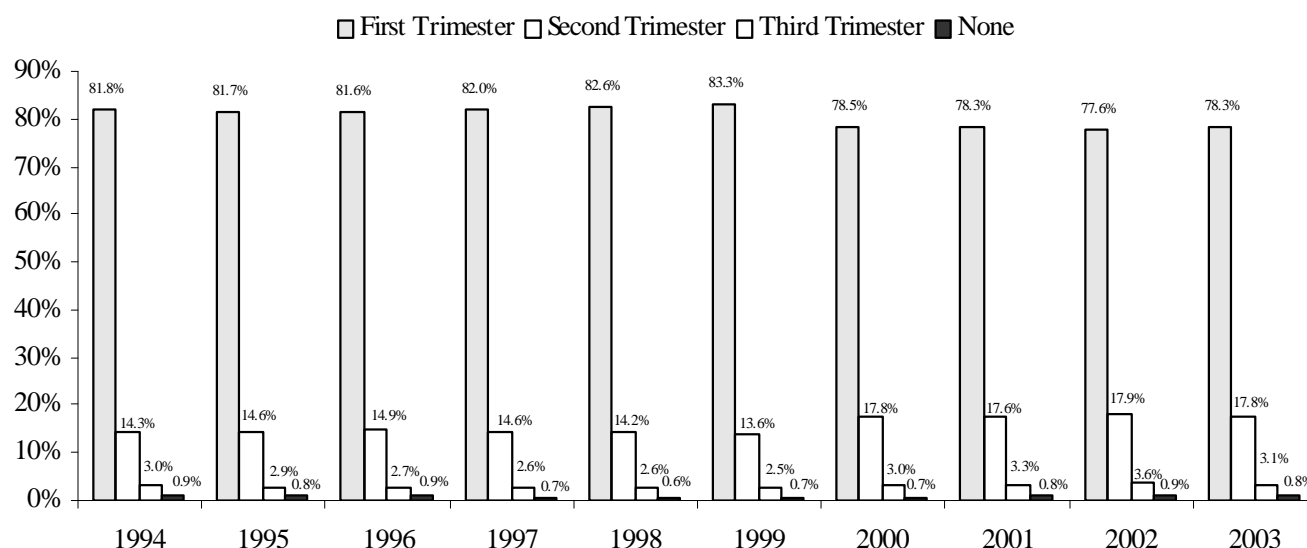
Trimester Prenatal Care Began	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
First	8,491	78.2	7,070	83.0	1,231	59.8	190	66.7
Second	1,934	17.8	1,262	14.8	589	28.6	83	29.1
Third	338	3.1	145	1.7	182	8.8	11	3.9
None	82	0.8	32	0.4	50	2.4	*	*
Unknown	19	0.2	10	0.1	8	0.4	*	*
Total	10,864	100.0	8,519	100.0	2,060	100.0	285	100.0

Note: Failure of the races to add to the total is due to the unknown races contained in the total birth column.

*Cells with less than 3 events.

Source: South Dakota Department of Health

Figure 6
South Dakota Resident Single Live Births by Trimester
Prenatal Care Began, 1994-2003



Source: South Dakota Department of Health

Table 13, below, indicates that 11.9 percent of the pregnancies resulting in low birth weight babies (less than 2,500 grams) had less than five

prenatal care visits; 28.9 percent of the American Indian and 7.3 percent of the white low birth weight babies had fewer than five prenatal care visits.

Table 13
South Dakota Resident Single Live Births by Number of Prenatal Visits
and Mother's Race for Low Birth Weight Babies, 2003

Number of Prenatal Care Visits	Total		Race of Mother					
			White		American Indian		Other	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	19	3.0	9	1.8	10	7.8	*	*
1-4	57	8.9	27	5.5	27	21.1	3	12.5
5-9	259	40.3	192	39.2	58	45.3	9	37.5
10-14	237	36.9	204	41.6	23	18.0	10	41.7
15-19	44	6.9	37	7.6	6	4.7	*	*
20+	18	2.8	16	3.3	*	*	*	*
Not Stated	8	1.2	5	1.0	*	*	*	*
Total	642	100.0	490	100.0	128	100.0	24	100.0

Note: *Cells with less than 3 events.

Source: South Dakota Department of Health

Congenital Anomalies

Congenital anomalies reported from 1999 to 2003 are shown in Table 14 below. Since 1989, South Dakota birth certificates have contained check boxes to report some of the most severe congenital anomalies. The total number of infants with at least one anomaly in the period from 1989-2003 was 3,008 with a total of 3,527 congenital anomalies being reported.

From 1999 to 2003 there were 878 infants with at least one congenital anomaly. In 2003 there were 194 infants with at least one congenital anomaly which accounted for less than two percent of total births.

The most frequently reported anomaly since 1989 was other musculoskeletal/integumental anomalies, which continues to be the most frequent for the five year total.

Table 14
South Dakota Resident Births with Reported Congenital Anomalies,
by Mother's Race and Baby's Gender, 1999-2003

	Total	Baby's Gender	
		Female	Male
Number of infants with at least one anomaly	878	347	531
Total Congenital Anomalies	1,009	398	611
Other Musculoskeletal/Integumental Anomalies	174	83	91
Other Urogenital Anomalies	103	14	89
Heart Malformations	96	39	57
Cleft Lip/Palate	95	38	57
Malformed Genitalia	80	5	75
Polydactyly/Syndactyly/Adactyly	62	27	35
Club Foot	56	21	35
Down's Syndrome	51	33	18
Other Circulatory Anomalies	45	18	27
Other Gastrointestinal Anomalies	35	15	20
Omphalocele/Gastroschisis	33	23	10
Hydrocephalus	27	13	14
Other Central Nervous System Anomalies	22	10	12
Other Chromosomal Anomalies	22	11	11
Diaphragmatic Hernia	18	9	9
Tracheo-Esophageal Fistula/Esophageal Atresia	12	8	4
Spina Bifida/Meningocele	11	6	5
Anencephalus	10	5	5
Other	57	20	37

Source: South Dakota Department of Health

Table 15, below, shows congenital anomalies reported over the last 10 years. The total number of infants with at least one anomaly from 1994 to 2003 is 1,809. There was also a 2.6 percent increase in the

number of infants with at least one anomaly from 2002 to 2003. From 1994 to 2003 there was a 9.3 percent decrease in the number of infants with at least one anomaly.

Table 15
South Dakota Resident Births with Reported Congenital Anomalies, 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total Births	104,949	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470	10,504
Number of infants with at least one anomaly	1,809	194	189	168	151	176	170	176	182	189	214
Other Musculoskeletal/Integumental Anomalies	357	36	26	27	35	50	41	45	49	24	24
Other Urogenital Anomalies	273	25	20	12	21	25	27	32	34	40	37
Heart Malformations	185	29	21	17	17	12	17	16	16	20	20
Cleft Lip/Palate	168	22	14	22	17	20	15	17	11	12	18
Malformed Genitalia	114	18	21	23	13	5	3	5	8	9	9
Other Circulatory Anomalies	114	10	11	10	6	8	10	25	13	12	9
Polydactyly/Syndactyly/Adactyly	110	12	13	8	13	16	8	13	13	9	5
Club Foot	95	14	14	13	7	8	8	8	6	13	4
Down's Syndrome	88	12	12	10	6	11	10	7	7	3	10
Other Gastrointestinal Anomalies	63	6	6	6	7	10	6	4	5	5	8
Omphalocele/Gastroschisis	60	5	7	9	10	*	6	5	7	3	6
Other Central Nervous System Anomalies	43	8	4	5	3	*	4	4	*	5	6
Other Chromosomal Anomalies	43	5	7	3	3	4	5	*	4	7	3
Hydrocephalus	40	4	5	6	7	5	3	*	*	3	5
Diaphragmatic Hernia	35	*	7	4	*	4	*	5	5	*	4
Spina Bifida/Meningocele	30	3	3	3	*	*	3	3	4	3	6
Renal Agenesis	24	3	4	*	*	4	*	4	*	*	*
Tracheoesophageal Fistula/Esoophageal Atresia	21	3	3	*	*	4	*	*	*	*	4
Microcephalus	15	*	*	*	4	*	3	*	*	*	*
Anencephalus	13	*	3	*	*	4	*	*	*	*	*
Rectal Astresia/Stenosis	11	*	3	*	*	*	*	*	*	*	*
Other	206	5	5	3	*	12	29	12	30	46	62

Note: *Cells with less than 3 events.
Source: South Dakota Department of Health

Medical History Factors

Table 16, below, lists the medical history factors that were reported on birth certificates for South Dakota resident mothers from 1994 to 2003. During 2003, these medical history factors were associated with 22.7 percent of pregnancies resulting in live births. These medical

factors can increase the morbidity and mortality risks of both the mother and infant, particularly when they are not adequately treated (1). For example, pregnancy-associated hypertension, the factor most frequently reported on 2003 South Dakota birth certificates, is one of the most frequent causes of maternal death in the United States (1).

Table 16
South Dakota Resident Single Live Births by
Mother's Medical History Factors for this Pregnancy, 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total births	103,423	10,864	10,521	10,295	10,204	10,365	10,122	10,046	10,307	10,333	10,366
Hypertension, pregnancy-associated	4,843	565	555	533	584	578	421	393	425	368	421
Diabetes, gestational	2,492	313	314	288	260	282	236	219	213	173	194
Hydramnios/Oligohydramnios	2,254	266	277	261	244	250	238	222	208	158	130
Previous infant 4000+ grams	2,189	257	214	175	189	212	191	259	238	220	234
Previous preterm or small-for-gestational-age infant	1,770	208	185	141	171	156	159	188	182	169	211
Anemia (Hct. <30/Hgb. <10)	1,576	185	180	164	188	181	141	111	147	135	144
Uterine bleeding	764	58	53	55	59	83	93	87	109	78	89
Hypertension, chronic	739	107	99	78	63	82	67	59	65	62	57
Diabetes, pre-existing	565	68	80	67	63	62	62	45	33	49	36
Genital herpes	472	52	46	49	64	53	38	50	32	49	39
Acute or chronic lung disease	421	63	70	45	68	60	48	25	21	11	10
Incompetent cervix	378	33	45	41	41	47	31	35	35	37	33
Eclampsia	314	13	11	23	29	43	47	46	40	44	18
Blood group sensitization	267	17	24	21	12	40	25	33	31	33	31
Renal disease	239	26	21	31	33	45	19	15	21	15	13
Cardiac disease	228	37	27	40	30	30	15	11	14	12	12
Other	9,419	612	633	950	927	837	1,092	1,025	1,172	1,105	1,066
None	78,616	8,403	8,103	7,756	7,605	7,811	7,641	7,652	7,737	7,942	7,966

Note: For purposes of reporting medical history factors of the mother, multiple births (twins, triplets, etc.) are counted only as a single birth.
Source: South Dakota Department of Health

Complications of Labor and/or Delivery

Table 17 lists the complications of labor and/or delivery from 1994 to 2003 reported on South Dakota resident birth certificates. The four most prevalent complications per 1,000 live births were

fetal distress (61.0 per 1,000), meconium, moderate/heavy (51.4 per 1,000), dysfunctional labor (51.1 per 1,000) and breech/malpresentation (48.3 per 1,000). Overall, complications of labor and/or delivery were present in 27.1 percent of resident births in 2003.

Table 17
South Dakota Births by Complications of Labor and/or Delivery, 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total Births	104,949	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470	10,504
Fetal distress	5,779	672	711	682	664	572	464	429	532	546	507
Dysfunctional labor	5,127	563	543	509	602	534	392	499	510	523	452
Breech/Malpresentation	5,055	532	543	532	491	517	439	478	530	511	482
Meconium, moderate/heavy	4,505	567	566	550	549	429	354	331	392	415	352
Cephalopelvic disproportion	3,180	247	272	231	310	304	340	317	340	376	443
Premature rupture of membrane (>12 hours)	2,725	280	268	240	264	259	240	252	296	342	284
Precipitous labor (<3 hours)	2,043	245	253	207	175	162	208	181	176	225	211
Prolonged (>20 hours)	1,423	122	113	136	126	143	134	153	164	161	171
Febrile (>100°F. or 38°C.)	856	95	79	110	84	101	75	62	90	91	69
Other excessive bleeding	774	98	98	66	54	65	83	71	88	84	67
Abruptio placenta	735	74	72	66	77	83	65	78	66	78	76
Placenta previa	285	34	33	26	38	30	33	35	14	12	30
Cord prolapse	182	20	24	13	18	25	17	14	15	22	14
Anesthetic complications	49	6	4	4	6	4	4	6	3	7	5
Other	4,980	96	139	164	144	356	707	714	891	860	909
None	74,465	8,034	7,661	7,536	7,375	7,573	7,412	7,298	7,243	7,079	7,254

Source: South Dakota Department of Health

Apgar Score

The Apgar score was developed by the late Virginia Apgar, M.D., as a standardized mechanism to assess the physical condition of newborns. The score considers five easily identifiable attributes – heart rate, respiratory effort, muscle tone, reflex, and color. Each attribute is assessed and assigned a value from zero to two, with two being optimum. If the total score of these five components is seven or greater, a newborn is considered to be in good to excellent physical condition. As a method to predict a baby's chances of survival, the Apgar score is assessed at one and five minutes after delivery with the five-minute score regarded as the better measure to make predictions (1).

In 2003, 1.2 percent of South Dakota resident infants received five-minute Apgar scores less than seven. Considering race, 1.2 percent of white infants and 1.3 percent of American Indian infants received a five-

minute Apgar score less than seven in 2003.

Obstetric Procedures

Table 18, below, shows obstetric procedures used for the last 10 years. It lists the two most prevalent obstetric procedures in 2003 as electronic fetal monitoring (EFM) and ultrasound. EFM was reported on 87.4 percent of resident live birth certificates while ultrasound was reported on 66.4 percent of resident live birth certificates in 2003. Racially, EFM usage was 86.5 percent for white mothers and 91.9 percent for American Indian mothers. Likewise, ultrasound usage was reported for 68.4 percent of white mothers and 60.2 percent of American Indian mothers on 2003 birth certificates. Overall, obstetric procedures were reported on 95.9 percent of 2003 resident live birth certificates.

Table 18
South Dakota Resident Single Live Births by Obstetric Procedures, 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total Births	103,423	10,864	10,521	10,295	10,204	10,365	10,122	10,046	10,307	10,333	10,366
Electronic fetal monitoring	83,864	9,498	9,092	8,814	8,697	8,840	8,459	7,623	7,734	7,405	7,702
Ultrasound	69,046	7,215	6,967	7,055	7,058	6,969	6,851	6,650	6,979	6,781	6,521
Induction of labor	20,764	2,861	2,755	2,534	2,318	2,182	1,827	1,821	1,650	1,498	1,318
Stimulation of labor	14,355	1,582	1,666	1,651	1,450	1,500	1,386	1,280	1,360	1,295	1,185
Tocolysis	2,172	173	224	219	211	246	205	211	221	241	221
Amniocentesis	1,966	210	179	189	211	243	173	158	202	191	210
Other	1,276	25	23	10	32	113	164	200	245	215	249
None	6,108	447	440	524	710	610	595	629	683	801	669

Note: For purposes of reporting obstetric procedures of the mother, multiple births (twins, triplets, etc.) are counted only as a single birth.
Source: South Dakota Department of Health

Abnormal Conditions of the Newborn

Table 19, below, shows the last 10 years of abnormal conditions in newborns. In 2003, 2.9 percent of South Dakota resident live birth certificates reported abnormal conditions of the newborn. Racially, abnormal conditions were reported for 2.9

percent of white infants while they were reported for 3.2 percent of American Indian infants. Overall, assisted ventilation greater than 30 minutes was the most prevalent condition reported in 2003.

Table 19
South Dakota Resident Live Births by Abnormal Conditions of the Newborn 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total Births	104,949	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470	10,504
Assisted ventilation <30 min.	1,376	31	30	45	57	65	128	123	195	366	336
Assisted ventilation >30 min.	1,093	153	156	93	108	116	108	87	91	76	105
Hyaline membrane disease/RDS	703	91	121	106	76	64	47	45	52	45	56
Birth injury	272	22	37	19	28	28	19	32	26	20	41
Meconium aspiration syndrome	222	28	31	19	18	21	18	18	26	24	19
Anemia (Hct. <39/Hgb. <13)	160	13	18	7	6	15	15	16	14	34	22
Other	2,604	62	91	101	126	229	353	442	460	444	296
None	99,021	10,701	10,296	10,133	9,970	10,039	9,667	9,487	9,701	9,504	9,523

Note: Abnormal conditions do not equal the total number of resident births due to multiple conditions listed on some birth certificates.

Source: South Dakota Department of Health

Methods of Delivery

Table 20, below, shows the last 10 years of births by method of delivery. In 2003, vaginal births accounted for 72.2 percent of the South Dakota resident births, which is a decrease of 0.9 percent from 72.9 percent in 2002.

In 2003, primary C-section accounted for 14.6 percent of the South Dakota resident births. This is a 1.4 percent increase from 14.4 percent of South Dakota resident primary C-section births in 2002.

Table 20
South Dakota Resident Live Births by Method of Delivery, 1994-2003

	Total	Year of Birth									
		2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Total Births	104,949	11,022	10,698	10,475	10,346	10,516	10,281	10,168	10,469	10,470	10,504
Vaginal	78,512	7,962	7,795	7,798	7,721	7,877	7,793	7,872	8,034	8,046	7,614
Primary C-section	13,731	1,612	1,537	1,391	1,414	1,382	1,296	1,207	1,359	1,228	1,305
Repeat C-section	9,723	1,242	1,144	1,046	957	968	933	830	829	866	908
Vacuum	7,607	843	765	785	746	751	906	819	779	629	584
Forceps	3,096	251	271	240	238	304	325	367	370	364	366
Vaginal birth after previous C-section	2,516	206	222	240	253	289	258	259	245	273	271

Source: South Dakota Department of Health